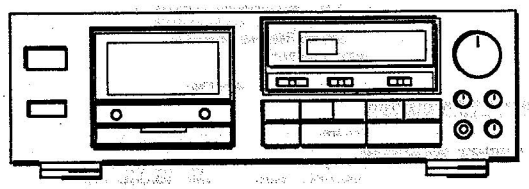
S/M Code No.90 – 086 DATE OF ISSUE 8/1990 –

AIWA®

AD-R707
AD-F600

SERVICE MANUAL



STEREO CASSETTE DECK

• BASIC TAPE MECHANISM : α – 14

• TYPE. H,U,C,E,K,Z (R707)
H,K,E,Z (F600)

AIWA Co., Ltd.

Tokyo Japan

Printed in Japan

SPECIFICATIONS

AD – R707

Type	Stereo cassette tape deck
Track format	4 tracks, 2 channels
Power supply	AD-R707E, Z AC 220 V, 50 Hz AD-R707K AC 240V, 50 Hz AD-R707H AC 120 V/220 V/240 V switchable, 50/60 Hz AD-R707U AC 120 V/220 V/240 V switchable, 60 Hz AD-R707C AC 120 V, 60 Hz
Power consumption	17 W
Frequency response	METAL tape: 20–18,000 Hz CrO_2 tape: 20–17,000 Hz NORMAL tape: 20–16,000 Hz
Signal-to-noise ratio	73 dB (METAL tape DOLBY C NR ON above 5 kHz)
Wow and flutter	0.065% (WRMS) 0.18% (according to DIN 45500)
Tape speed	4.8 cm/sec. ($1\frac{7}{8}$ ips)
Recording system	AC bias (frequency 105 kHz)
Erase system	AC erase
Motor	DC servomotor (1)
Heads	Record/playback head (1) Erase head (1) (Double-gap ferite head)
Inputs	REC/LINE IN maximum input sensitivity: 50 mV (47 kΩ)
Outputs	PLAY/LINE OUT standard output level: 320 mV (0 VU); suitable load impedance: over 47 kΩ
Dimensions	430(W) × 133(H) × 269(D) mm
Weight	4.0 kg

AD – F600

Type	Stereo cassette tape deck
Track format	4 tracks, 2 channels
Power supply	AD-F600E, Z AC 220 V, 50 Hz AD-F600K AC 240V, 50 Hz AD-F600H AC 120 V/220 V/240 V switchable, 50/60 Hz
Power consumption	17 W
Frequency response	METAL tape: 20–20,000 Hz CrO_2 tape: 20–18,000 Hz NORMAL tape: 20–17,000 Hz
Signal-to-noise ratio	73 dB (METAL tape DOLBY C NR ON above 5 kHz)
Wow and flutter	0.048% (WRMS) 0.12% (according to DIN 45500)
Tape speed	4.8 cm/sec. ($1\frac{7}{8}$ ips)
Recording system	AC bias (frequency 105 kHz)
Erase system	AC erase
Motor	DC servomotor (1) DC motor (1)
Heads	Record/playback head (1) (PC-OCC super DX head) Erase head (1) (Double-gap ferite head)
Inputs	REC/LINE IN maximum input sensitivity: 50 mV (47 kΩ)
Outputs	PLAY/LINE OUT standard output level: 350 mV (0 VU); suitable load impedance: over 47 kΩ
Dimensions	430(W) × 133(H) × 269(D) mm
Weight	4.3 kg

• Design and specifications are subject to change without notice.

- Dolby noise reduction and HX Pro headroom extension manufactured under license from Dolby Laboratories Licensing Corporation. HX Pro originated by Bang & Olufsen.
- "DOLBY", the double-D symbol □□, and "HX PRO" are trademarks of Dolby Laboratories Licensing Corporation.

ELECTRICAL MAIN PARTS LIST

REF. NO.	PART NO.	DESCRIPTION
===IC===		
	87-001-440-019	IC, BA15218N
	87-001-983-010	IC, CXA1331S
	87-001-533-010	IC, GP1U501(REMOTE SENSOR)(R707)
	87-001-486-019	IC, ICPN15
	87-001-334-010	IC, LB9051A
	80-DS3-619-010	IC, LC6554H-4444
	87-020-680-019	IC, NJM2068S
	87-020-758-019	IC, NJM2068SD
	87-020-908-019	IC, NJU4066BD
	87-027-827-019	IC, TC4069UBP
===TRANSISTOR===		
	89-110-155-019	TRANSISTOR, 2SA1015GR
	89-112-965-019	TRANSISTOR, 2SA1296GR
	87-026-463-019	TRANSISTOR, 2SA933S(SR)(R707)
	89-109-521-019	TRANSISTOR, 2SA952K
	89-213-302-019	TRANSISTOR, 2SB1330Q
	87-026-462-019	TRANSISTOR, 2SC1740S(SR)
	89-318-156-019	TRANSISTOR, 2SC1815BL
	89-318-155-019	TRANSISTOR, 2SC1815GR
	89-320-011-019	TRANSISTOR, 2SC2001K
	89-331-130-019	TRANSISTOR, 2SC3113
	89-419-442-019	TRANSISTOR, 2SD1944J, K
	89-420-052-019	TRANSISTOR, 2SD2005Q
	87-026-483-019	TRANSISTOR, DTA123JS
	87-026-216-019	TRANSISTOR, DTA124ES
	87-026-484-019	TRANSISTOR, DTC123JS
	87-026-217-019	TRANSISTOR, DTC124ES
===DIODE===		
	87-001-559-019	DIODE 1SS131
	87-020-465-019	DIODE 1SS133
	87-020-123-019	DIODE DS446-AT(F600)
	87-001-783-019	DIODE IN4002-T
	87-027-346-019	DIODE, ZENER HZ11A2L
	87-027-676-019	DIODE, ZENER HZ12B3L
	87-027-479-019	DIODE, ZENER HZ27-2
	87-027-301-019	DIODE, ZENER HZ3A1
	87-027-649-019	DIODE, ZENER HZ7A2(F600)
	87-027-416-019	DIODE, ZENER HZ3C2(F600)
	87-027-286-019	DIODE, ZENER HZ5C1
	87-027-584-019	DIODE, ZENER HZ9C1L(R707)
===MAIN CIRCUIT BOARD SECTION===		
C1	*87-010-388-019	CAP, ELECT 1000-25 SME
C2	*87-010-389-019	CAP, ELECT 2200-25 SME
C3	*87-010-235-019	CAP, ELECT 470-16 SME
C4	*87-010-235-019	CAP, ELECT 470-16 SME
C5	*87-010-235-019	CAP, ELECT 470-16 SME
C6	*87-010-248-019	CAP, ELECT 220-10 SME
C7	*87-010-221-019	CAP, ELECT 470-10
C8	*87-010-370-019	CAP, ELECT 330-6.3 SME
C9	*87-010-401-019	CAP, ELECT 1-50 SME
C10	*87-010-404-019	CAP, ELECT 4.7-50 SME
C11	*87-010-247-019	CAP, ELECT 100-50 SME
C12	*87-010-401-019	CAP, ELECT 1-50 SME
C13	*87-010-394-019	CAP, ELECT 220-35 SME
C113	*87-018-126-019	CAP, CERA-SOL SS 390P-50
C114	*87-018-126-019	CAP, CERA-SOL SS 390P-50
C117	*87-010-382-019	CAP, ELECT 22-25 SME
C118	*87-010-382-019	CAP, ELECT 22-25 SME
C119	*87-010-382-019	CAP, ELECT 22-25 SME
C120	*87-010-382-019	CAP, ELECT 22-25 SME
C123	*87-018-126-019	CAP, CERA-SOL SS 390P-50
C124	*87-018-126-019	CAP, CERA-SOL SS 390P-50
C130	*87-018-134-019	CAP, CERA-SOL SS 0.01-16
C131	*87-018-205-019	CAP, CERA-SOL SS 0.022-25
C211	*87-010-402-019	CAP, ELECT 2.2-50 SME(R707)
C211	*87-010-404-019	CAP, ELECT 4.7-50 SME(F600)
C212	*87-010-402-019	CAP, ELECT 2.2-50 SME(R707)
C212	*87-010-404-019	CAP, ELECT 4.7-50 SME(F600)
C229	*87-018-196-019	CAP, SERA-SOL SS 1500P
C230	*87-018-196-019	CAP, SERA-SOL SS 1500P
C233	*87-010-404-019	CAP, ELECT 4.7-50 SME
C234	*87-010-404-019	CAP, ELECT 4.7-50 SME
C235	*87-018-132-019	CAP, CERA-SOL SS 2200P-16
C236	*87-018-132-019	CAP, CERA-SOL SS 2200P-16
C237	*87-018-119-019	CAP, CERA-SOL SS 100P-50
C238	*87-018-119-019	CAP, CERA-SOL SS 100P-50
C317	*87-010-825-019	CAP, ELECT 0.56-50 SME
C318	*87-010-825-019	CAP, ELECT 0.56-50 SME
C319	*87-010-546-019	CAP, ELECT 0.33-50 SME
C320	*87-010-546-019	CAP, ELECT 0.33-50 SME
C321	*87-010-405-019	CAP, ELECT 10-50 SME
C323	*87-010-382-019	CAP, ELECT 22-25 SME
C401	*87-010-401-019	CAP, ELECT 1-50 SME(R707)
C401	*87-010-402-019	CAP, ELECT 2.2-50 SME(F600)
C402	*87-010-401-019	CAP, ELECT 1-50 SME(R707)
C402	*87-010-402-019	CAP, ELECT 2.2-50 SME(F600)
C411	*87-010-404-019	CAP, ELECT 4.7-50 SME
C412	*87-010-404-019	CAP, ELECT 4.7-50 SME
C523	*87-010-382-019	CAP, ELECT 22-25 SME
C524	*87-010-381-019	CAP, ELECT 330-16 SME
C526	*87-018-201-019	CAP, CERA-SOL SS 5600P-16
C529	*87-014-073-019	CAP, PP 4700P-100
C551	*87-010-101-019	CAP, ELECT 220-16 SME
C552	*87-010-370-019	CAP, ELECT 330-6.3 SME
C557	*87-018-134-019	CAP, CERA-SOL SS 0.01-16
C558	*87-018-134-019	CAP, CERA-SOL SS 0.01-16
C561	*87-018-127-019	CAP, CERA-SOL SS 470P-50
C562	*87-018-127-019	CAP, CERA-SOL SS 470P-50
C563	*87-018-123-019	CAP, CERA-SOL SS 220P-50
C564	*87-018-123-019	CAP, CERA-SOL SS 220P-50
C565	*87-018-131-019	CAP, CERA-SOL SS 1000P-50
C566	*87-018-131-019	CAP, CERA-SOL SS 1000P-50
C601	*87-018-133-019	CAP, CERA-SOL SS 4700P-16
C602	*87-018-100-019	CAP, CERA-SOL SS 4.7P
C603	*87-018-132-019	CAP, CERA-SOL SS 2200P-16
C604	*87-018-205-019	CAP, CERA-SOL SS 0.022-25(R707)
C605	*87-018-119-019	CAP, CERA-SOL SS 100P-50
C606	*87-010-401-019	CAP, ELECT 1-50 SME
C607	*87-010-263-019	CAP, ELECT 100-10
C651	*87-010-401-019	CAP, ELECT 1-50 SME
C652	*87-010-401-019	CAP, ELECT 1-50 SME
C653	*87-010-402-019	CAP, ELECT 2.2-50 SME
C654	*87-010-402-019	CAP, ELECT 2.2-50 SME
C656	*87-010-263-019	CAP, ELECT 100-10
C657	*87-010-248-019	CAP, ELECT 220-10 SME
C721	*87-010-235-019	CAP, ELECT 470-16 SME
C723	*87-010-235-019	CAP, ELECT 470-16 SME
C725	*87-010-381-019	CAP, ELECT 330-16 SME(F600)
C750	*87-018-134-019	CAP, CERA-SOL SS 0.01-16
C751	*87-010-404-019	CAP, ELECT 4.7-50 SME
C752	*87-010-404-019	CAP, ELECT 4.7-50 SME
C753	*87-010-263-019	CAP, ELECT 100-10
C754	*87-010-263-019	CAP, ELECT 100-10
C851	*87-010-382-019	CAP, ELECT 22-25 SME(R707)
C852	*87-010-402-019	CAP, ELECT 2.2-50 SME(R707)
⚠FR2	87-029-089-019	RES, FUSE 4.7-1/4W
J411	81-584-634-019	JACK ASSY, 4P(REC LINE IN) (PLAY LINE OUT)
J751	87-009-043-019	JACK, 6.3(PHONES)
L211	*87-003-131-019	COIL, 10MMH
L212	*87-003-131-019	COIL, 10MMH
L213	*82-231-622-010	COIL, 22MMH
L214	*82-231-622-010	COIL, 22MMH
L311	*80-DS3-620-019	FILTER, DOLBY 105K
L312	*80-DS3-620-019	FILTER, DOLBY 105K
L521	*80-DS3-615-010	COIL, BIAS 105K(R707)
L521	*80-DS5-617-010	COIL, BIAS 105K-1(F600)
L551	*80-DS3-616-010	COIL, HX 105K(R707)
L551	*80-DS5-618-010	COIL, HX 105K-1(F600)
L552	*80-DS3-616-010	COIL, HX 105K(R707)
L552	*80-DS5-618-010	COIL, HX 105K-1(F600)
SFR101	*87-024-168-019	SFR, 1K
SFR102	*87-024-168-019	SFR, 1K
SFR213	*87-024-169-019	SFR, 2.2K
SFR214	*87-024-169-019	SFR, 2.2K
SFR551	*87-024-177-019	SFR, 220K
SFR552	*87-024-177-019	SFR, 220K
VR210	*80-DS5-615-019	VOLUME, 5KB(REC CALIBRATION) (F600)
===FRONT CIRCUIT BOARD SECTION===		
C301	*87-015-684-019	CAP, ELECT 47-16
C901	*87-018-131-019	CAP, CERA-SOL SS 1000P-50
C902	*87-015-689-019	CAP, ELECT 10-35
C903	*87-015-681-019	CAP, ELECT 10-16
C904	*87-015-681-019	CAP, ELECT 10-16
FL901	80-DS3-631-010	FILTER, CP1102GR (12-POINT PEAK HOLD METER)
LED901	82-234-606-019	LED, SLZ381C50, G, L105(◁ REV)(R707)
LED902	82-234-606-019	LED, SLZ381C50, G, L105(FWD ▷)(R707) (▷ PLAY)(F600)
LED903	82-234-620-019	LED, SLZ981C50, R, L105 (● REC/⊙ REC MUTE)
LED904	82-234-607-019	LED, SLZ481C50, Y, L105(▯▯ PAUSE)
SW301	87-036-135-019	SLIDE SW(DOLBY NR)
SW901	87-036-170-019	TACT SW(◁◁ MS)
SW902	87-036-170-019	TACT SW(◁ REV)(R707)
SW903	87-036-170-019	TACT SW(FWD ▷)(R707) (▷ PLAY)(F600)
SW904	87-036-170-019	TACT SW(MS ▷▷)
SW905	87-036-170-019	TACT SW(▯▯ PAUSE)
SW906	87-036-170-019	TACT SW(● REC/⊙ REC MUTE)
SW907	87-036-170-019	TACT SW(□ STOP)
SW908	87-036-170-019	TACT SW(COUNTER RESET)
SW909	87-036-208-019	SLIDE SW(TIMER)
SW910	87-036-208-019	SLIDE SW(REVERSE MODE)(R707)
VR401	84-794-621-010	VOLUME, 50KA(REC LEVEL)
VR402	84-794-622-010	VOLUME, 200KW(REC BALANCE)
VR501	84-794-623-010	VOLUME, 50KB(BIAS FINE)
X901	*87-030-167-019	VIB, CER CST4.0MHZ
===POWER CIRCUIT BOARD SECTION===		
⚠C14	*87-019-112-019	CAP, SPARK KILLER 0.01E
⚠PT1	80-DS3-610-019	POWER TRANSFORMER, H(H, R707 U)
⚠PT1	80-DS3-611-019	POWER TRANSFORMER, C(R707 C)
⚠PT1	80-DS3-612-019	POWER TRANSFORMER, EZ(E, Z)
⚠PT1	80-DS3-613-019	POWER TRANSFORMER, KG(K)
⚠SW2	87-036-136-019	ROTARY SW(AC VOLTAGE)(H, R707 U)
===POWER SW CIRCUIT BOARD SECTION===		
⚠SW1	87-036-184-019	PUSH SW(POWER)
===DECK CIRCUIT BOARD SECTION===		
M1	87-045-296-019	MOTOR, EG-530 AD, 2B(R707)
M1	87-045-312-019	MOTOR, MM1652LK(F600)
M2	87-045-301-019	MOTOR, MMN-6FILBOK(F600)
S1	87-036-109-010	PUSH SW(CST)
S2	87-036-110-010	PUSH SW(CrO_2)
S3	87-036-110-010	PUSH SW(RE-A)
S4	87-036-109-010	PUSH SW(RE-B)(R707)
S5	87-036-109-010	PUSH SW(MT)
S6	87-036-109-010	PUSH SW(DIR)(R707)
SOL1	86-535-611-210	SOLENOID, X-3 PL(PLAY)
SOL2	86-535-612-210	SOLENOID, X-3 FR(F/R)
===SENSOR CIRCUIT BOARD SECTION(R707 ONLY)===		
CP1	87-001-367-019	PHOTO SENSOR SPI-315-CD
===RELAY CIRCUIT BOARD SECTION (R707 ONLY)===		
===MISCELLANEOUS==		
⚠	82-187-797-019	AC CORD (E)(H, E, Z)
⚠	87-034-583-019	AC CORD ASSY U(R707 U, C)
⚠	82-187-796-019	AC CORD (BS)(K)
⚠	87-085-185-010	BUSHING, AC CORD E(H, E, Z)
⚠	87-085-184-010	BUSHING, AC CORD D(R707 U, C)
⚠	87-085-189-010	BUSHING, AC CORD U(K)
EH	*87-046-196-019	E HEAD(F600)
RPEH	87-046-350-019	R.P.E HEAD(R707)
RPH	87-046-343-019	R.P HEAD(F600)

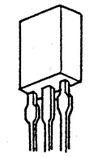
E C B

2SA1015 2SC1740

2SA1296 2SC1815

2SA933 2SC2001

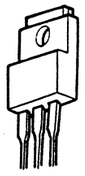
2SA952



B C E

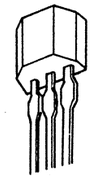
2SB1330

2SD2005



B C E

2SC3113



B C E

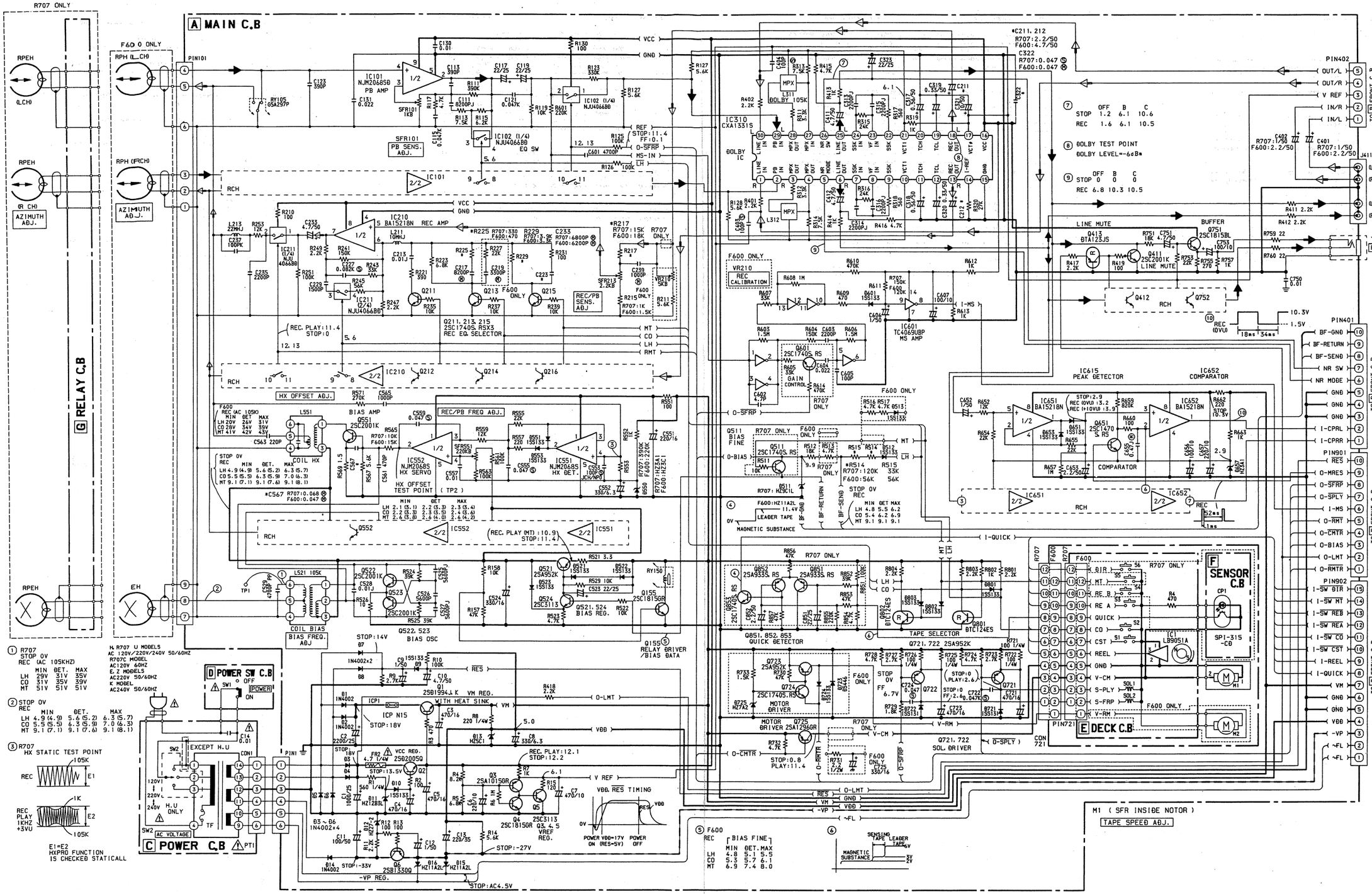
2SD1944 DTC124

DTA123

DTA124

DTC123

SCHEMATIC DIAGRAM – 1



① R707 STOP 0V REC (AC 105KHZ)

	MIN	DET.	MAX
LH	29V	31V	35V
CO	31V	35V	39V
MT	51V	51V	51V

② STOP 0V REC

	MIN	DET.	MAX
LH	4.9 (4.9)	5.6 (5.2)	6.3 (5.7)
CO	5.5 (5.5)	6.3 (5.9)	7.0 (6.3)
MT	9.1 (7.1)	9.1 (7.6)	9.1 (8.1)

③ R707 HX STATIC TEST POINT

E1=E2 HXPRO FUNCTION IS CHECKED STATICALL

H R707 U MODELS
AC 120V/220V/240V 50/60HZ
R707C MODEL
AC120V 60HZ
E,Z MODELS
AC220V 50/60HZ
K MODEL
AC240V 50/60HZ

⑤ F600 REC

	BIAS FINE		
	MIN	DET.	MAX
LH	4.8	5.1	5.5
CO	5.3	5.7	6.1
MT	6.9	7.4	8.0

⑥

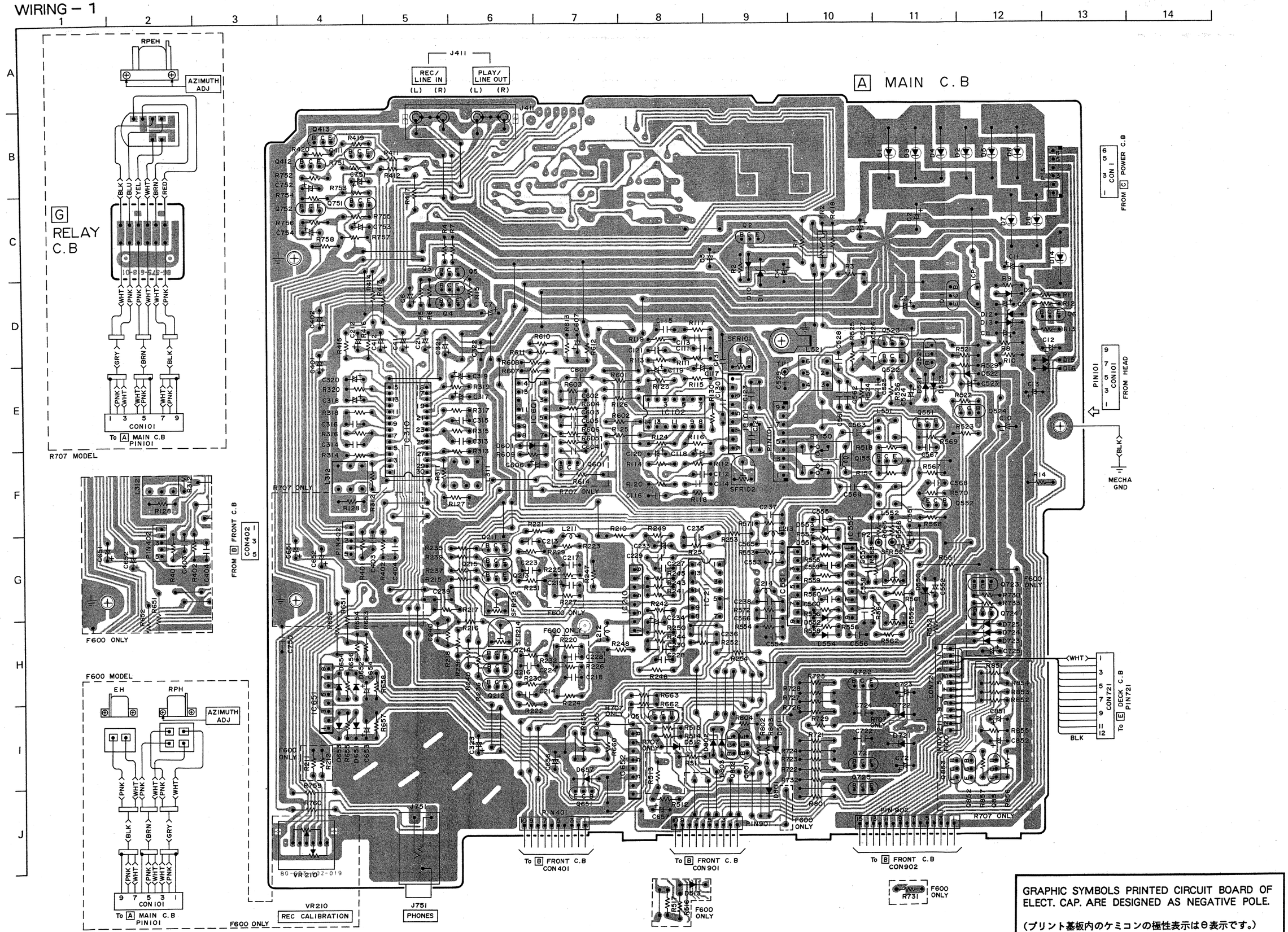
⑦

	OFF	B	C
STOP	1.2	6.1	10.6
REC	1.6	6.1	10.5

⑧ DOLBY TEST POINT
DOLBY LEVEL=-6dB

⑨

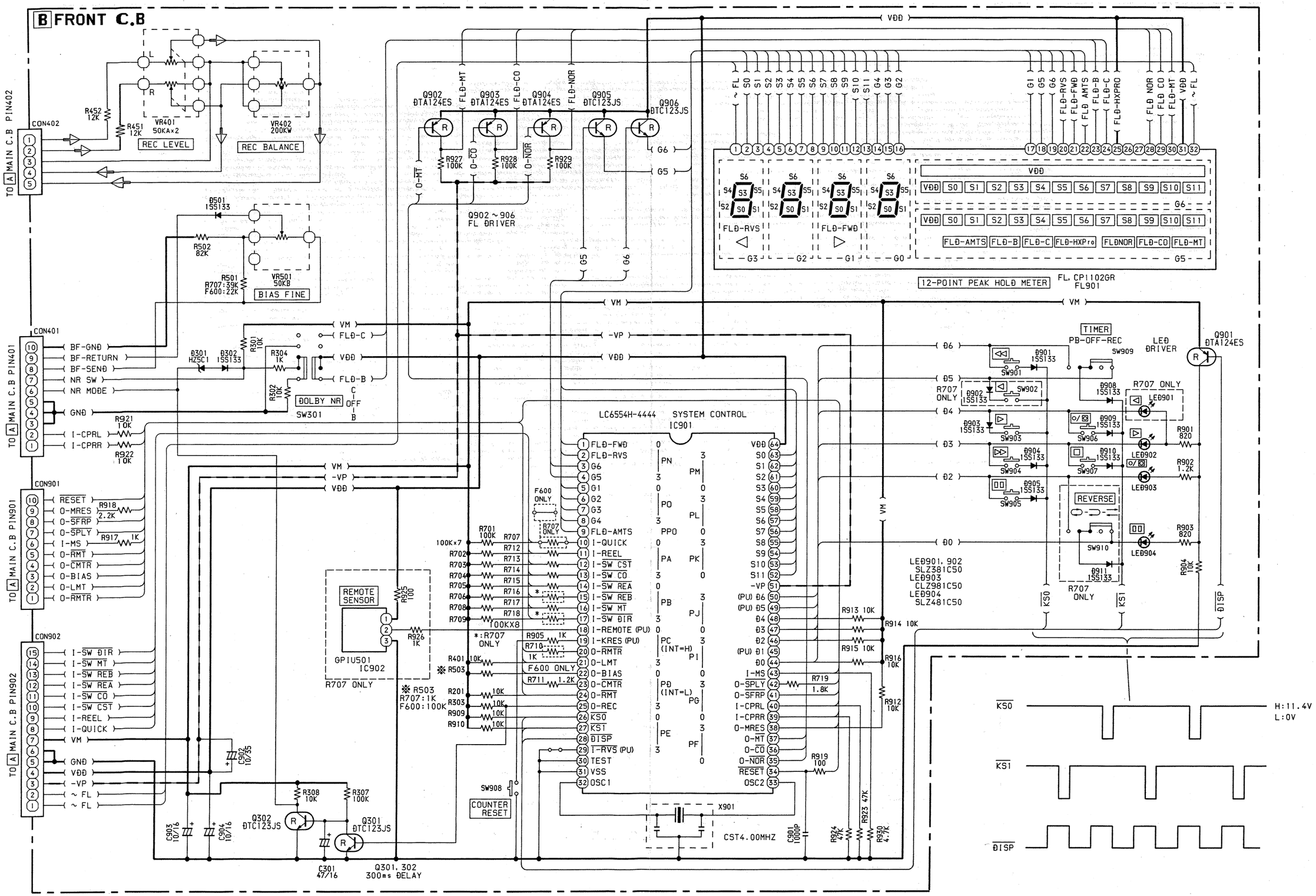
	OFF	B	C
STOP	0	0	0
REC	6.8	10.3	10.5



GRAPHIC SYMBOLS PRINTED CIRCUIT BOARD OF ELECT. CAP. ARE DESIGNED AS NEGATIVE POLE.

(プリント基板内のケミコンの極性表示はθ表示です。)

SCHEMATIC DIAGRAM – 2



B FRONT C.B

80-DS3-607-019

VR401 REC LEVEL

VR402 REC BALANCE

VR501 BIAS FINE

SW301 DOLBY NR C ↔ OFF ↔ B

FL901 12-POINT PEAK HOLD METER

R707 ONLY SW910 REVERSE MODE

SW909 TIMER REC ↔ OFF ↔ PLAY/REPEAT

IC902 REMOTE SENSOR

SW908 COUNTER RESET

※F600 ONLY

CON402 RED 1 3 5 CON402 To A MAIN C.B PIN402

CON401 10 9 7 5 3 1 PIN401 FROM A MAIN C.B

CON901 10 9 7 5 3 1 PIN901 FROM A MAIN C.B

CON902 15 13 11 9 7 5 3 1 PIN902 FROM A MAIN C.B

LED904 SW905 PAUSE

SW904 MS ▷▷

R707 ONLY LED902 SW903 FWD ▷

F600 ONLY LED902 SW903 ▷ PLAY

R707 ONLY LED901 SW902 ◁ REV

SW907 STOP

SW901 ◁◁ MS

LED903 SW906 ● REC/ ○ REC MUTE

D POWER SW C.B

SW1 POWER OFF ↕ ON

C POWER C.B

H, R707 U MODELS AC 120V/220V/240V 50/60Hz

R707 C MODEL AC 120V 60Hz

E, Z MODELS AC 220V 50/60Hz

K MODEL AC 240V 50/60Hz

BRN BLK BLU

C14

EXCEPT H, R707 U

H, R707 U ONLY

SW2 AC VOLTAGE 120V ↕ 220V ↕ 240V

PT1

TF

H, R707 U ONLY

BLK RED CON1 6 5 3 1 To A MAIN C.B PIN1

80-653-603-019

FROM A MAIN C.B 1 3 5 7 9 11 12 CON721

E DECK C.B

M1 WHT RED SPEED ADJ.

S4 S2 S6 (DIR) SOL2 (F/R) S4 (RE B) S2 (CrO2) S1 (CST) S5 (MT) S3 (RE A) SOL1 (PLAY)

IC1

CP1 (PHOTO SENSOR)

F SENSOR C.B

R707 MODEL

FROM A MAIN C.B 1 3 5 7 9 11 12 CON721

E DECK C.B

M2 WHT SPEED ADJ. M1

S2 SOL2 (F/R) S2 (CrO2) S1 (CST) S5 (MT) S3 (RE A) SOL1 (PLAY)

IC

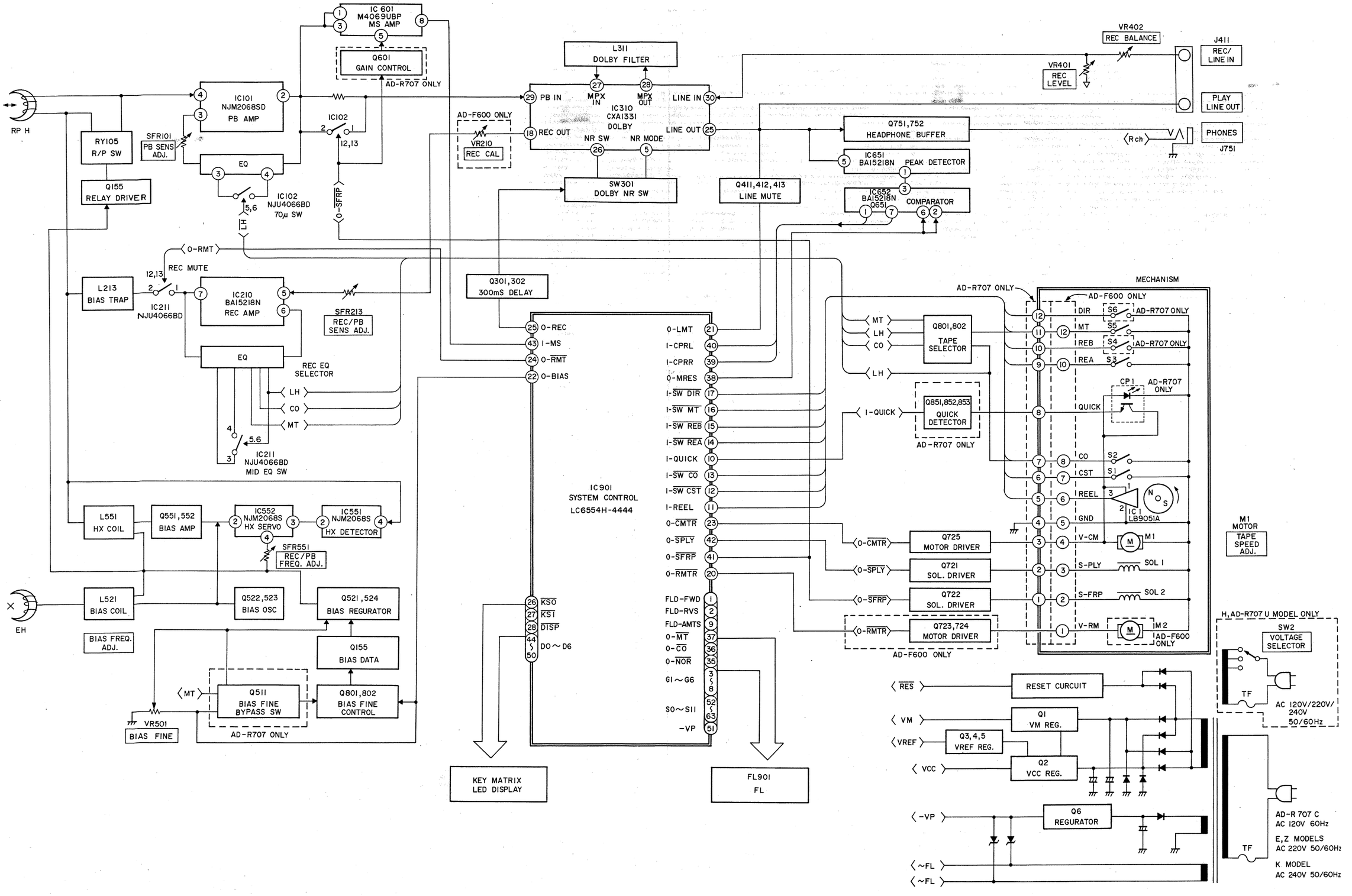
86-575-630-019

F600 MODEL

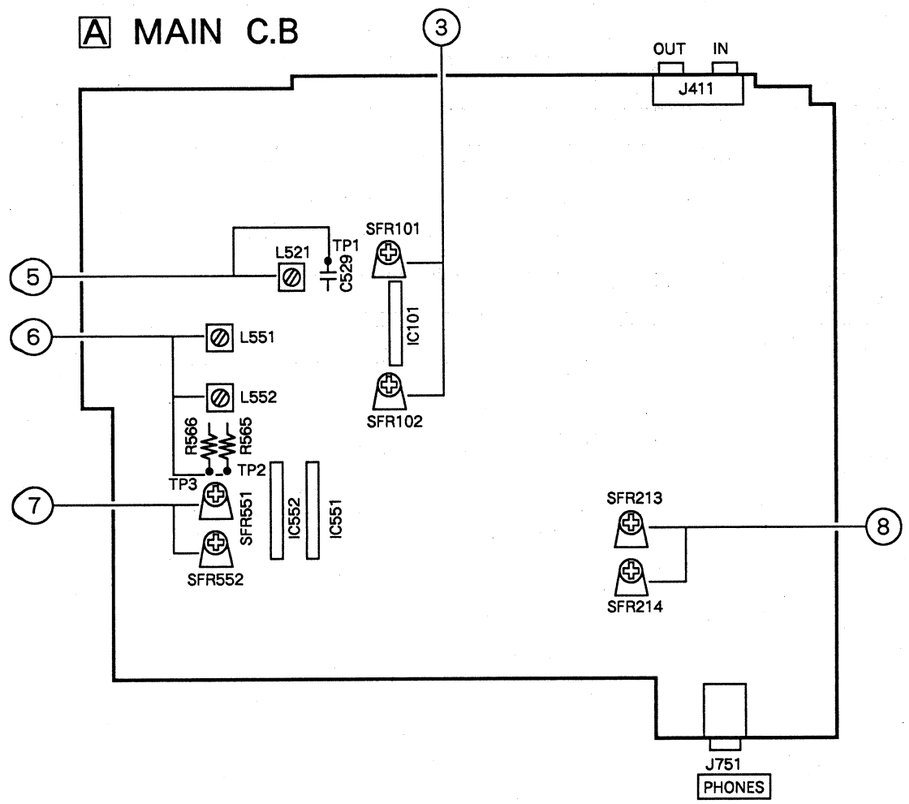
GRAPHIC SYMBOLS PRINTED CIRCUIT BOARD OF ELECT. CAP. ARE DESIGNED AS NEGATIVE POLE.

(プリント基板内のケミコンの極性表示はθ表示です。)

BLOCK DIAGRAM



ADJUSTM ENT



Initial Settings

1. REC LEVEL : MAX
2. BIAS FINE : Center click position
3. REC BALANCE : Center click position
4. REC CALIBRATION : Center click position
5. DOLBY NR SW : OFF
6. TIMER SW : OFF

1. Tape Speed Adjustment
   Settings : • Test tape : TTA – 100 (TTA – 111S)
   • Test point : LINE OUT jack
   • Adjustment Location : SFR inside motor
   Method : Play back the test tape, adjust for 3000Hz.

2. Head Azimuth Adjustment
   Settings : • Test tape : TTS – 310 (TTA – 317E, SCC – 1429)
   • Test point : LINE OUT jack
   • Adjustment Location : Head azimuth adjustment screw
   Method : Play back the 10kHz signal of the test tape and adjust so that the output becomes maximum.

3. PB Sensitivity Adjustment
   Settings : • Test tape : TTS – 200 (TTA – 161, TCC – 130)
   • Test point : LINE OUT jack
   • Adjustment Location : SFR101 (L ch)
   SFR102 (R ch)
   Method : Play back the test tape and adjust so that the output level is 494mV ± 10mV.

4. PB Frequency Response Check
   Settings : • Test tape : TTS – 310 (TTA – 317E, SCC – 1429)
   • Test point : LINE OUT jack
   Method : Play back the 315Hz and 10kHz signals of the test tape and check the output of the 10kHz signal is 0dB ± 2.5dB with respect to that of the 315Hz signal.

5. Bias Frequency Adjustment
   Settings : • Test tape : TTA – 620 (TTA – 119MP)
   • Test point : TP1
   • Adjustment Location : L521
   Method : Set to the record mode and adjust so that the frequency counter reads 105kHz ± 1kHz.

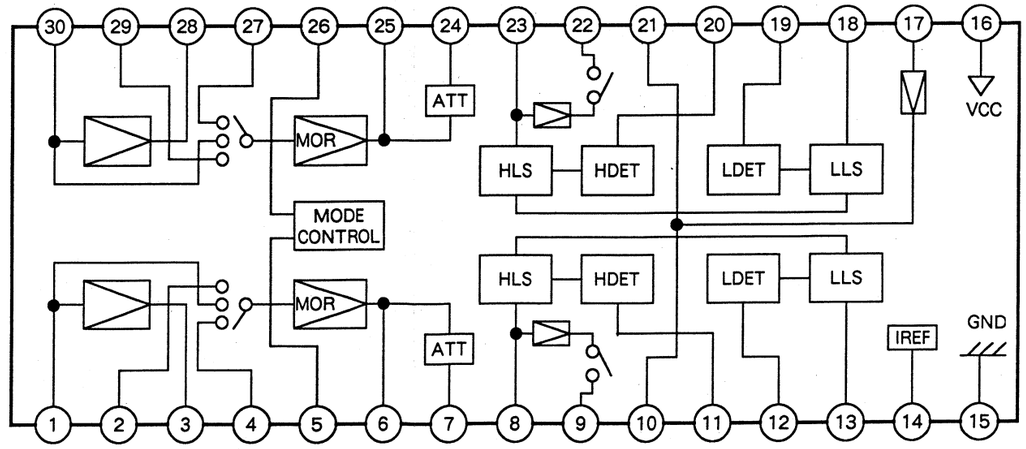
6. HX OFFSET Adjustment
   Settings : • Test tape : TTA – 620 (TTA – 119MP)
   • Test point : TP2 (L ch), TP3 (R ch)
   • Adjustment Location : L551 (L ch)
   L552 (R ch)
   Method : Set to the record mode and adjust so the bias voltage leaking to the test point is minimum level.

7. REC/PB Frequency Response Adjustment
   Settings : • Test tape : TTA – 600 (TTA – 119K)
   • Test point : LINE OUT jack
   • Input signal : 1kHz/10kHz (LINE IN)
   • Adjustment Location : SFR551 (L ch)
   SFR552 (R ch)
   Method : Apply a 1kHz signal and adjust attenuator so that the output level at the LINE OUT jack is 32mV (R707), 35mV (F600).
   Record and play back the 1kHz and 10kHz signals and adjust so that the output of the 10kHz signal is – 0.5dB + 0.5dB, – 0dB with respect to that of the 1kHz signal.

8. REC/PB Sensitivity Adjustment
   Settings : • Test tape : TTA – 600 (TTA – 119K)
   • Test point : LINE OUT jack
   • Adjustment Location : SFR213 (L ch)
   SFR214 (R ch)
   Method : Apply a 1kHz signal and adjust attenuator so that the output level at the LINE OUT jack is 32mV (R707), 35mV (F600).
   Record and play back the 1kHz signal and adjust so that the output is – 0.5dB + 0.5dB, – 0dB.

IC BLOCK DIAGRAM

IC,CXA1331S



PRACTICAL SERVICE FIGURE

PB output level :	494mV ± 50mV (LINE OUT)
REC/PB output level :	350mV ± 2.0dB (LINE OUT)
Distortion (REC/PB) :	Less than 2.0 % (NORM., CrO2, MT)
Erasing ratio :	More than 60dB
Crosstalk :	More than 60dB
Channel separation :	More than 30dB
Noise (PB) :	Less than 2.0mV (DOLBY OFF NORM.) Less than 1.0mV (DOLBY C CrO2, MT)
PB/REC S/N ratio : (LINEAR)	More than 39/46/49dB (DOLBY OFF/B/C NORM.) More than 41/47/50dB (DOLBY OFF/B/C CrO2,MT)
Recording bias frequency :	105kHz
Tape speed :	3000Hz ± 1.5 %
Wow & flutter (W.RMS) :	Less than 0.08 % (R707) Less than 0.055 % (F600)
Take – up torque :	30~55g-cm
F.F & REW torque :	120 ± 30g-cm
Back tension :	2~5g-cm
Test tape :	NORMAL : TTA – 600 (TTA – 119K) CrO2 : TTA – 610 (TTA – 119H) METAL : TTA – 620 (TTA – 119MP)

IC DESCRIPTION

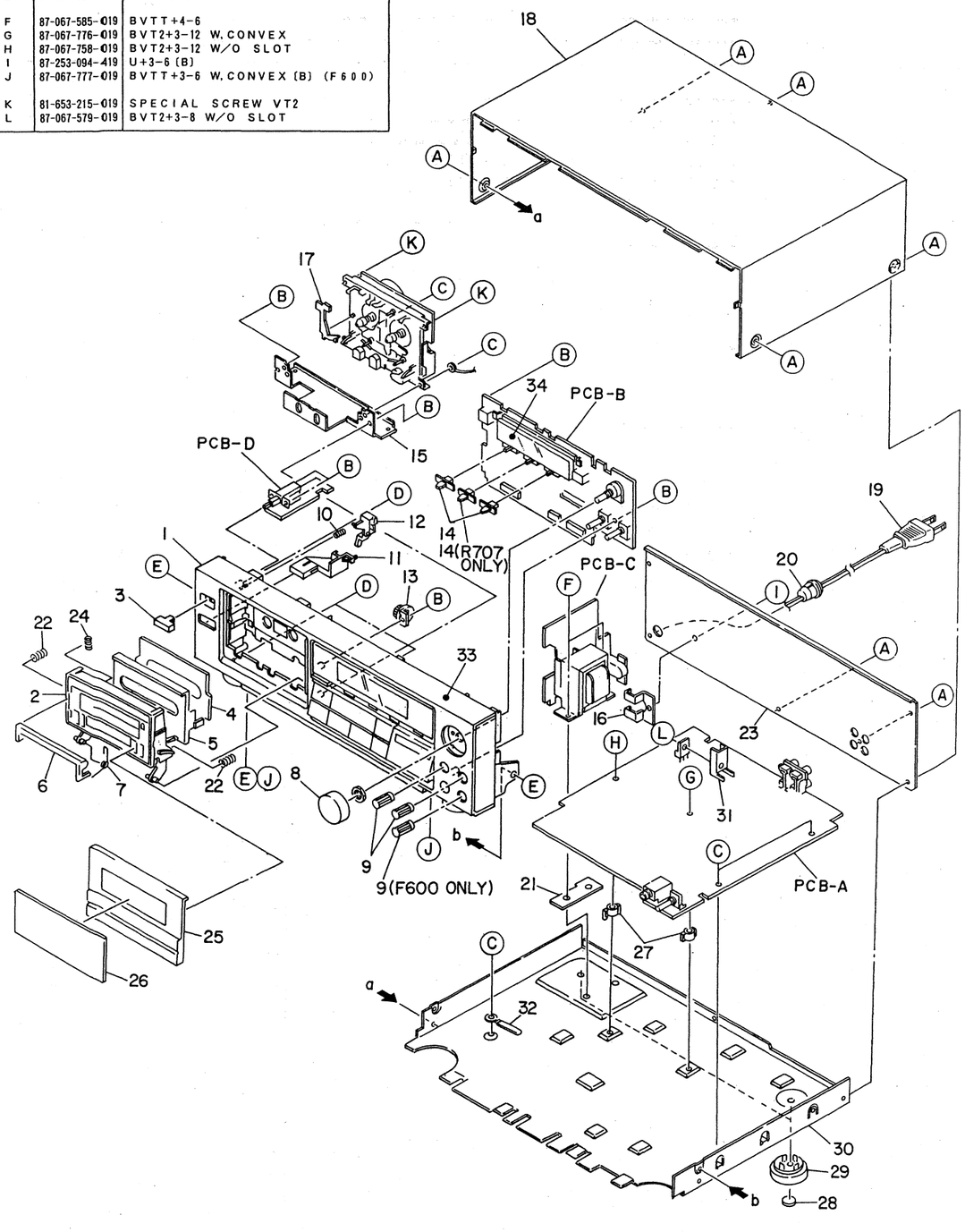
IC, LC6554H-4444

Pin No.	Pin Name	I/O	Description
1	FLD-FWD	O	Fluorescent display tube output. With direction ▷, "H" in FWD mode and "L" in REVmode. For the AD-F600, "L" in both FWD and REV mode.
2	FLD-RVS	O	Fluorescent display tube output. With direction ◁, "L" in FWD mode and "H" in REVmode. For the AD-F600, "L"in both FWD and REV mode.
3	G6	O	Fluorescent display tube grid output G6. Right channel meter display.
4	G5	O	Fluorescent display tube grid output G5. Dolby NR, AMTS, TAPE, HxPRO, left channel display.
5	G1	O	Fluorescent display tube grid output G1. One's place of counter.
6	G2	O	Fluorescent display tube grid output G2. Ten's place of counter.
7	G3	O	Fluorescent display tube grid output G3. Hundred's place of counter.
8	G4	O	Fluorescent display tube grid output G4. Thousand's place of counter.
9	FLD-AMTS	O	Fluorescent display tube output. AMTS. "H" is output at the detection of the rising edge of $\overline{\text{SW CST}}$ when a cassette is loaded. Signal goes low at the detection of the falling edge of SW CST.
10	I-QUICK	I	QUICK reverse detection input. "H" input during quick reverse. (AD-R707 only).
11	I-REEL	I	Reel path detection input.
12	I-$\overline{\text{SW CST}}$	I	Cassette detection switch. "L" when a cassette is loaded.
13	I-$\overline{\text{SW CO}}$	I	CrO_2 hole detection switch. "H" when cassette uses CrO_2 tape.
14	I-$\overline{\text{SW REA}}$	I	Erasure prevention detection switch for side A. "L" when side A is recordable.
15	I-$\overline{\text{SW REB}}$	I	Erasure prevention detection switch for side B. "L" when side B is recordable.
16	I-$\overline{\text{SW MT}}$	I	Metal hole detection switch. "H" when cassette uses metal tape.
17	I-$\overline{\text{SW DIR}}$	I	Direction detection switch. "L" for side A.
18	I-REMOTE	I	Remote control input.
19	I-KRES	I	Counter reset input.
20	O-$\overline{\text{RMTR}}$	O	Reel motor control output. "L" when reel motor is rotating.
21	O-LMT	O	Line mute output. "H" during muting. "L" in REV mode during recording.
22	O-BIAS	O	Bias oscillator control output. "L" in REV mode.
23	O-$\overline{\text{CMTR}}$	O	Capstan motor control output. "L" when capstan motor is rotating and the power is on for AUTO SENSOR/QUICK SENSOR.
24	O-$\overline{\text{RMT}}$	O	REC mute control output. "L" during muting. All "L" in other than REC PLAY mode.
25	O-REC	O	DOLBY IC record switch. "H" when recording.
26	$\overline{\text{KS0}}$	O	DATA0 - DATA6 KEY SCAN Output.
27	$\overline{\text{KS1}}$	O	
28	$\overline{\text{DISP}}$	O	DATA0 - DATA6 LED scan output.
29	I-$\overline{\text{RVS}}$	I	REVERSE mode input. "L" during REVERSE mode.
30	TEST	–	CPU test terminal. Connected to VSS.

Pin No.	Pin Name	I/O	Description		
31	VSS	–	Connected to GND.		
32	OSC1	–	4 MHz clock oscillator terminal.		
33	OSC2	–			
34	$\overline{\text{RESET}}$	–	CPU reset terminal.		
35	O-$\overline{\text{NOR}}$	O	Output for display indicating normal tapes.		
36	O-$\overline{\text{CO}}$	O	Output for display indicating CrO_2 tapes.		
37	O-$\overline{\text{MT}}$	O	Output for display indicating metal tapes.		
38	O-MRES	O	Output for 12-point peak meter.		
39	I-CPRR	I	Right channel peak meter input.		
40	I-CPRL	I	Left channel peak meter input.		
41	O-$\overline{\text{SFRP}}$	O	F/R solenoid control output. "L" when solenoid bar is drawn into coil.		
42	O-$\overline{\text{SPLY}}$	O	PLAY solenoid control output. "L" when solenoid bar is drawn into coil.		
43	I-MS	I	Music sensor detect input. "L" when music sensor is on.		
44	D0	O	$\overline{\text{KS0}}$	$\overline{\text{KS1}}$	$\overline{\text{DISP}}$
			———	SW ⇐⇒	LED PAUSE
45	D1	O	———	———	———
46	D2	O	KEY PAUSE	SW CONT.	LED REC/RMT
47	D3	O	KEY ▷▷	KEY STOP	LED PLAY-FWD
48	D4	O	KEY ▷	KEY REC/RMT	LED PLAY-REV
49	D5	O	KEY ◁	SW TIMER REC	———
50	D6	O	KEY◁◁	SW TIMER PLAY	———
51	-VP	–	Makes plate voltage connection for flourescent .		
52	S11	O	Level meter output. (+10 dB display)		
53	S10	O	Level meter output. (+7 dB display)		
54	S9	O	Level meter output. (+5 dB display)		
55	S8	O	Level meter output. (+3 dB display)		
56	S7	O	Level meter output. (+1 dB display)		
57	S6	O	Fluorescent display tube segment output and level meter output. (+0 dB display)		
58	S5	O	Fluorescent display tube segment output and level meter output. (-3 dB display)		
59	S4	O	Fluorescent display tube segment output and level meter output. (-6 dB display)		
60	S3	O	Fluorescent display tube segment output and level meter output. (-8 dB display)		
61	S2	O	Fluorescent display tube segment output and level meter output. (-10 dB display)		
62	S1	O	Fluorescent display tube segment output and level meter output. (-15 dB display)		
63	S0	O	Fluorescent display tube segment output and level meter output. (-20 dB display)		
64	VDD	–	CPU power supply terminal. (+5 V)		

EXPLODED VIEW – 1

REF. NO.	PART NO.	DESCRIPTION
A	87-067-660-019	BVT2+3-8 W/O SLOT (B)
B	87-067-703-019	BVT2+3-10 W/O SLOT
C	87-067-688-019	BVTT+3-6
D	87-661-096-419	VFT1+3-10
E	87-591-094-419	QIT+3-6
F	87-067-585-019	BVTT+4-6
G	87-067-776-019	BVT2+3-12 W. CONVEX
H	87-067-758-019	BVT2+3-12 W/O SLOT
I	87-253-094-419	U+3-6 (B)
J	87-067-777-019	BVTT+3-6 W. CONVEX (B) (F600)
K	81-653-215-019	SPECIAL SCREW VT2
L	87-067-579-019	BVT2+3-8 W/O SLOT

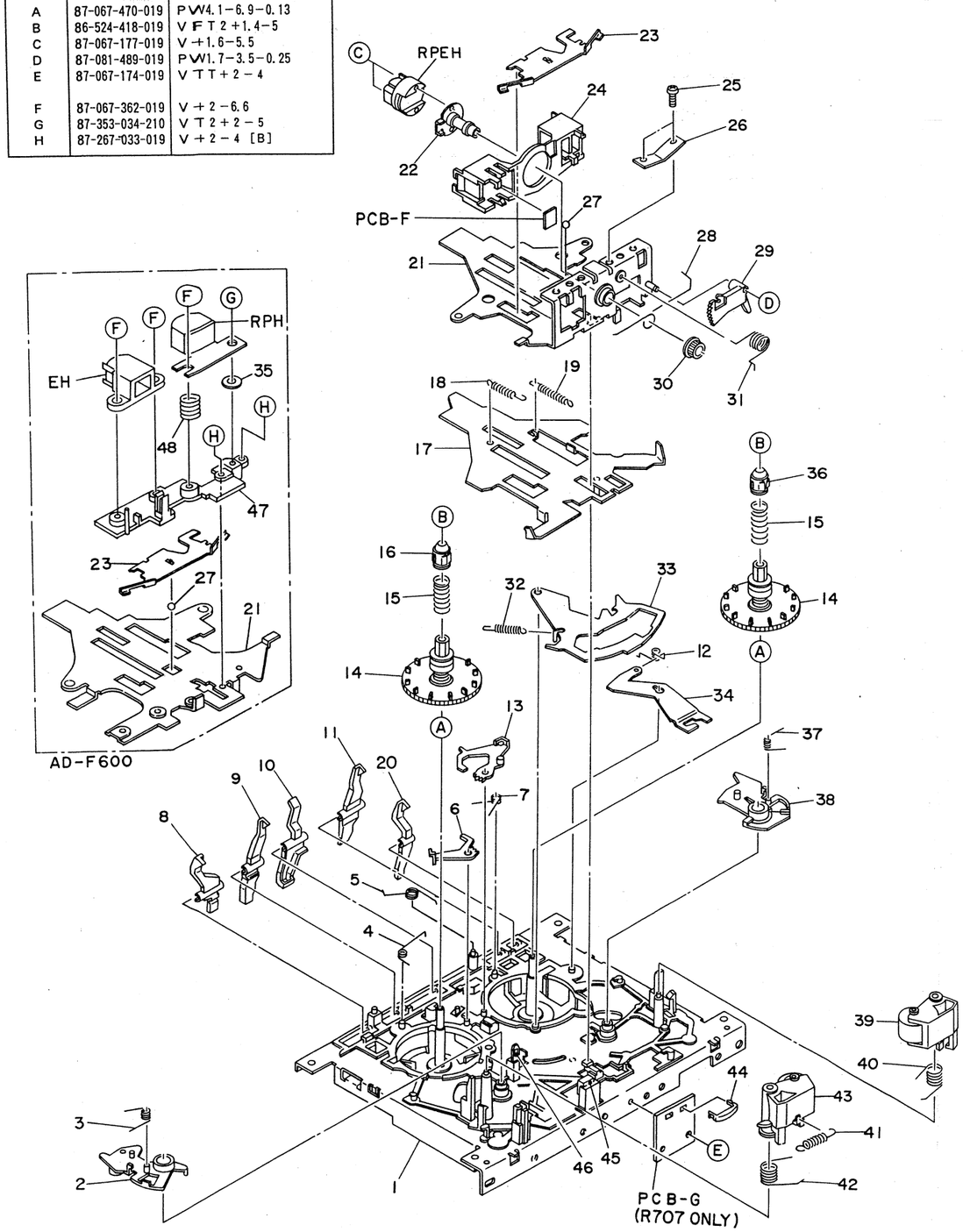


MECHANICAL PARTS LIST

PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q'TY
	1-1	★09-047-608-010	FRONT CABINET ASSY (R707 H, C, E, K, Z)	※	1
	1-1	★09-047-609-010	FRONT CABINET ASSY (R707 U)	※	1
	1-1	★09-047-607-010	FRONT CABINET ASSY (F600)	※	1
	1-2	84-790-013-019	BOX, CASSETTE		1
	1-3	★84-721-023-010	BUTTON, POWER		1
	1-4	★84-790-202-019	RUBBER, AMTS (R707 H, C, E, K, Z, F600)		1
	1-4	★84-790-217-019	RUBBER, AMTS (R707 U)		1
	1-5	★84-790-032-219	PANEL, AMTS		1
	1-6	★84-790-204-019	HOOK, EJECT		1
	1-7	★80-DS3-202-019	T-SPRING, EJECT 1	※	1
	1-8	★82-235-014-119	KNOB, REC		1
	1-9	★80-DS3-007-019	KNOB, BIAS	※	2(R707) 3(F600)
	1-10	★80-DS3-209-019	C-SPRING, EJECT	※	1
	1-11	★84-793-011-010	BUTTON, EJECT		1
	1-12	★80-DS3-203-019	LEVER, EJECT	※	1
	1-13	★87-063-143-010	DAMPER, OIL 75		1
	1-14	★80-DW1-012-019	KNOB, SLIDE		3(R707) 2(F600)
	1-15	★80-DS3-204-019	PLATE, SHIELD	※	1
	1-16	★80-DS3-208-019	HOLDER, VS 2 (R707 H, U, F600 H)	※	1
	1-17	★82-235-204-010	LEVER, PROTECT		1
	1-18	★80-DS3-002-019	CABINET, STEEL	※	1
	1-19	★82-187-797-019	CORD, AC (R707 H, E, Z, F600 H, E, Z)		1
	1-19	★87-034-583-019	CORD, AC (R707 U, C)		1
	1-19	★82-187-796-019	CORD, AC (R707 K, F600 K)		1
	1-20	★87-085-185-010	BUSHING, AC CORD (R707 H, E, Z, F600 H, E, Z)		1
	1-20	★87-085-184-010	BUSHING, AC CORD (R707 U, C)		1
	1-20	★87-085-189-010	BUSHING, AC CORD (R707 K, F600 K)		1
	1-21	★80-DW1-209-019	PLATE, PT		1
	1-22	★82-238-205-019	C-SPRING, AMTS		2
	1-23	★80-DS3-022-019	PANEL, REAR (R707 H)	※	1
	1-23	★80-DS3-016-019	PANEL, REAR (R707 U)	※	1
	1-23	★80-DS3-017-019	PANEL, REAR (R707 C)	※	1
	1-23	★80-DS3-018-019	PANEL, REAR (R707 E)	※	1
	1-23	★80-DS3-019-019	PANEL, REAR (R707 K)	※	1
	1-23	★80-DS3-021-019	PANEL, REAR (R707 Z)	※	1
	1-23	★80-DS5-018-119	PANEL, REAR (F600 H)	※	1
	1-23	★80-DS5-014-019	PANEL, REAR (F600 E)	※	1
	1-23	★80-DS5-015-019	PANEL, REAR (F600 K)	※	1
	1-23	★80-DS5-017-019	PANEL, REAR (F600 Z)	※	1
	1-24	★84-790-205-019	C-SPRING, HOOK		1
	1-25	★80-DS3-003-019	PANEL, CASSETTE	※	1
	1-26	★80-DS3-008-010	WINDOW, CASSETTE (R707)	※	1
	1-26	★80-DS5-005-010	WINDOW, CASSETTE 5 (F600)	※	1
	1-27	★80-DS3-205-010	HOLDER, P.C.B H5.6	※	2
	1-28	★80-DS3-206-019	CUSHION, G DIA 15-1	※	2
	1-29	★80-DS3-014-019	FOOT, REAR ST	※	2
	1-30	---	CHASSIS, MAIN		1
	1-31	---	HEAT SINK		1
	1-32	---	BINDER, WIRE (F600)		1
	1-33	★80-DS5-002-010	PANEL, CABINET (F600)	※	1
	1-34	★80-DS3-207-010	GUIDE, FL	※	1

EXPLODED VIEW – 2

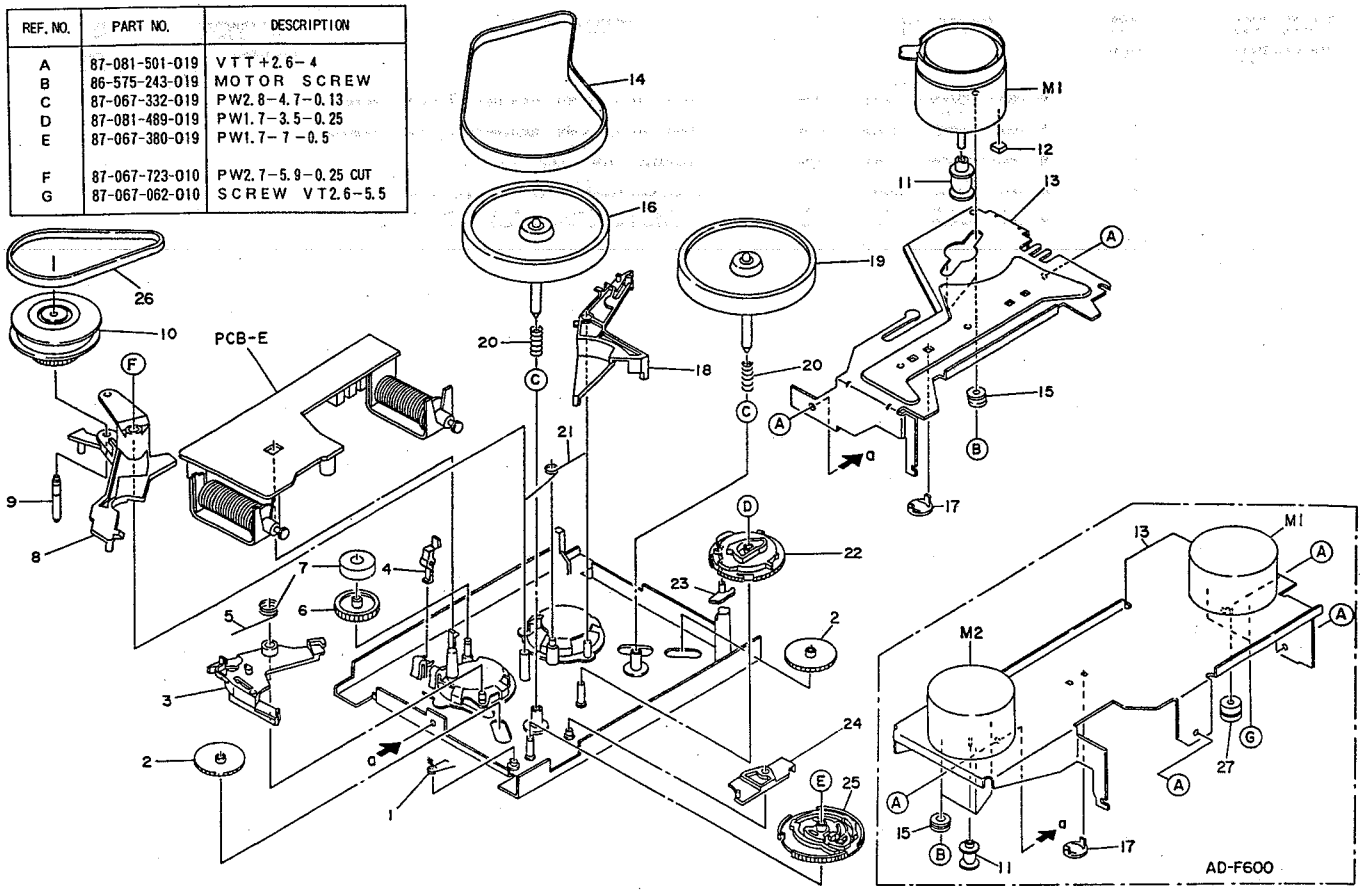
REF. NO.	PART NO.	DESCRIPTION
A	87-067-470-019	PW4.1-6.9-0.13
B	86-524-418-019	VFT2+1.4-5
C	87-067-177-019	V+1.6-5.5
D	87-081-489-019	PW1.7-3.5-0.25
E	87-067-174-019	VTT+2-4
F	87-067-362-019	V+2-6.6
G	87-353-034-210	VT2+2-5
H	87-267-033-019	V+2-4 [B]



PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q'TY
	2-1	★86-575-217-410	MECHANISM CHASSIS ASSY (R707)		1
	2-1	★86-575-264-010	MECHANISM S CHASSIS ASSY (F600)		1
	2-2	★86-535-239-110	LEVER, PLAY R (R707)		1
	2-3	★86-535-283-019	T-SPRING, PLAY GEAR R (R707)		1
	2-4	★86-535-371-019	T-SPRING, BRAKE R		1
	2-5	★86-575-225-019	T-SPRING, CASSETTE		1
	2-6	★86-535-252-210	LEVER, BRAKE R		1
	2-7	★86-535-370-019	T-SPRING, BRAKE F		1
	2-8	★86-535-247-210	LEVER, REC GUARD A		1
	2-9	★86-535-250-010	LEVER, METAL		1
	2-10	★86-535-249-210	LEVER, CASSETTE SENSOR		1
	2-11	★86-535-254-110	LEVER, CR		1
	2-12	★86-535-277-010	T-SPRING, D SW (R707)		1
	2-13	★86-535-251-010	LEVER, BRAKE F		1
	2-14	86-535-240-510	REEL TABLE R ASSY		2
	2-15	★86-535-293-019	C-SPRING, REEL TABLE		2
	2-16	★86-524-218-199	STOPPER, REEL TABLE S		1
	2-17	★86-535-215-310	SLIDE PLATE ASSY (R707)		1
	2-17	★86-535-385-210	SLIDE S PLATE ASSY (F600)		1
	2-18	★86-575-227-010	E-SPRING, LEVER SLIDE		1
	2-19	★86-535-286-010	E-SPRING, OPERATION (F600)		1
	2-19	★86-575-226-010	E-SPRING, CHASSIS HEAD (R707)		1
	2-20	★86-535-248-310	LEVER, REC GUARD B (R707)		1
	2-21	★86-575-209-110	CHASSIS, HEAD S (R707)		1
	2-21	★86-535-311-410	CHASSIS, HEAD S (F600)		1
	2-22	★86-575-207-110	HOUSING HEAD ASSY (R707)		1
	2-23	★86-535-289-110	P-SPRING, HEAD CHASSIS		1
	2-24	★86-575-214-110	GUIDE, TAPE (R707)		1
	2-25	★86-575-235-019	SCREW, S AZIMUTH (R707)		2
	2-26	★86-524-300-119	P-SPRING, AZIMUTH (R707)		1
	2-27	★87-073-018-010	BALL, STEEL 1.588		1
	2-28	★86-575-240-010	T-SPRING, GUIDE (R707)		1
	2-29	★86-535-246-210	GEAR, SEGMENT (R707)		1
	2-30	★86-575-206-010	GEAR, HEAD FR (R707)		1
	2-31	★86-535-290-010	T-SPRING, SEGMENT GEAR (R707)		1
	2-32	★86-535-284-010	E-SPRING, DIRECTION LEVER (R707)		1
	2-33	★86-535-218-210	LEVER DIRECTION ASSY (R707)		1
	2-34	★86-575-278-010	LEVER, PLAY SW (R707)		1
	2-35	★86-535-387-010	MYLAR W 2.3-5-0.188 (F600)		1
	2-36	★86-524-233-119	STOPPER, REEL TABLE T		1
	2-37	★86-535-282-019	T-SPRING, PLAY GEAR F		1
	2-38	★86-535-238-210	LEVER, PLAY F		1
	2-39	86-535-226-210	PINCH LEVER F ASSY		1
	2-40	★86-575-222-110	T-SPRING, PINCH F (R707)		1
	2-40	★86-535-312-010	T-SPRING, PINCH S (F600)		1
	2-41	★86-535-287-119	E-SPRING, PINCH (R707)		1
	2-42	★86-575-223-110	T-SPRING, PINCH R (R707)		1
	2-43	86-535-228-310	PINCH LEVER R ASSY (R707)		1
	2-44	★86-575-234-010	HOLDER, WIRE (R707)		1
	2-45	★86-535-353-019	FELT, SQ 5-4-2		1
	2-46	★86-517-353-019	QUICK, SHEET (R707)		1
	2-47	★86-535-314-110	BASE, HEAD (F600)		1
	2-48	★86-535-359-010	C-SPRING, AZIMUTH S (F600)		1

EXPLODED VIEW – 3

REF. NO.	PART NO.	DESCRIPTION
A	87-081-501-019	VTT+2.6-4
B	86-575-243-019	MOTOR SCREW
C	87-067-332-019	PW2.8-4.7-0.13
D	87-081-489-019	PW1.7-3.5-0.25
E	87-067-380-019	PW1.7-7-0.5
F	87-067-723-010	PW2.7-5.9-0.25 CUT
G	87-067-062-010	SCREW VT2.6-5.5



PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q'TY
	3-1	★86-535-291-210	T-SPRING,FR CAM		1
	3-2	★86-535-259-310	GEAR,PLAY (R707)		2
	3-2	★86-575-221-210	GEAR,PLAY (F600)		1
	3-3	★86-535-230-310	LEVER,TRIGGER FR		1
	3-4	★86-535-253-110	LEVER,RELAY (R707)		1
	3-5	★86-535-278-019	T-SPRING,FR		1
	3-6	★86-575-220-010	GEAR,IDLER		1
	3-7	★86-535-614-010	RING,MAGNET		1
	3-8	★86-535-233-210	LEVER,FR		1
	3-9	★86-535-235-010	SHAFT,FR		1
	3-10	★86-535-301-310	SLIP DISK ASSY (R707)		1
	3-11	★86-535-389-110	PULLEY,MOTOR C		1
	3-12	★86-575-261-110	CUSHION,G 5.5-1.5 (R707)		1
	3-13	★86-575-218-210	HOLDER,MOTOR (R707)		1
	3-13	★86-575-265-110	HOLDER,MOTOR 2M (F600)		1
	3-14	86-575-224-110	BELT 2 (R707)		1
	3-14	86-575-276-010	BELT MAIN 2M (F600)		1
	3-15	★86-575-242-010	CUSHION,G DIAL 3.7-9-3.2		2(R707) 3(F600)
	3-16	★86-575-226-010	FLYWHEEL 2M ASSY (F600)		1
	3-16	★86-575-203-110	FLYWHEEL F ASSY (R707)		1
	3-17	★86-535-255-010	RETAINER,FLYWHEEL		1
	3-18	★86-535-231-310	LEVER,TRIGGER PLAY		1
	3-19	★86-575-201-110	FLYWHEEL R ASSY (R707)		1
	3-20	★86-535-288-019	C-SPRING,FLYWHEEL		2
	3-21	★86-535-279-010	T-SPRING,MAIN		1
	3-22	★86-535-260-310	CAM,MAIN		1
	3-23	★86-535-308-110	LEVER,CHANGE (R707)		1
	3-24	★86-575-229-210	LEVER,PAUSE B (R707)		1
	3-24	★86-535-223-310	LEVER,PAUSE B (F600)		1
	3-25	★86-535-261-410	CAM,FRP		1
	3-26	★86-575-277-010	BELT,FR 2M (R707)		1
	3-27	★86-575-275-010	PULLY FR MOTOR		1

■ ACCESSORIES/PACKAGE LIST

PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q'TY
	1	★ 80 – DS3 – 905 – 019	INSTRUCTION BOOKLET, EX (R707)	※	1
	2	★ 80 – DS5 – 905 – 019	INSTRUCTION BOOKLET, EX (F600)	※	1
	3	★ 87 – 034 – 786 – 019	CORD, PIN 189 – 0760		2
	4	★ 87 – 042 – 062 – 010	PLUG, ADPIR S – I6115 (H)		1
	5	★ 80 – DS3 – 630 – 010	REMOTE CON ASSY RC – R101 (R707)		1